Toward the Commercial Exploitation of Red Algae from Senegal's 'Petite Côte'

1999-08-12

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On Senegal’s 'Petite Côte', as the shoreline south of Dakar near the city of Mbour is known, the sandy beaches are caressed by the waves and fanned by gentle breezes redolent of the sea. Fishing is a major activity, and many people along this coast rely on it for their livelihood. Yet there is one species among the algae littering the beach that could bring them much higher incomes. Along this seafront, conditions are highly favourable for growing red algae for commercial purposes, an activity that could help to create jobs and wealth, generate foreign exchange for the Senegalese economy, and above all produce sizeable and steady revenues for the local coastal populace.

According to Abdourahmane Tamba, a Senegalese biologist who has been studying the algae for years, they represent an unexploited goldmine. If harvested and dried, and then exported in their raw state, the red algae could bring CFAFr 200,000 per ton — overall, Senegal could produce 8,000 tons, worth some CFAFr 1.6 billion. What’s more, if the algae are processed into semi-finished products, they could be worth ten times as much, or CFAFr 16 billion in export earnings. Countries such as the Philippines have long been commercially exploiting these red algae, which are highly prized on the international market.

Gelatinous substance

When industrially processed, these algae yield a gelatinous substance that is used in the food, textile, cosmetic, and pharmaceutical industries as a stabilizing or thickening agent, a fixative, or a binder. Demand for the algae is high on the European (French and Danish), American, and Japanese markets.

Despite their commercial prospects, Tamba stresses that red algae should not be viewed as just an economic resource to be "mined", but also as an integral element of the environment. That is why he calls for the establishment of a kind of “social relationship” between the local populations and this natural resource.

Vital to biodiversity

“These rotting algae along the beach are vital to biodiversity. As they decompose they release minerals. Many species would be threatened if we were to adopt a careless approach to ‘mining’ this resource, and if we paid no attention to its sustainability. That would amount to killing off the algae, and destroying a link in the biological chain,” he warns.

Tamba reports that Senegalese industrialists are interested in culturing and processing the red algae. “They are going to make a commitment — the negotiations we have initiated have gone very well, and the industrial processing project is taking shape.” He adds that the project should be up-and-running within a matter of months. “Even the senior government authorities are aware of the economic potential for marketing red algae. Their view of the potential is that industrial exploitation is imminent,” says Tamba, who credits the International Development Research Centre (IDRC) for supporting this project.

Research results

To date, the project has succeeded in collecting species samples and assessing the algae stocks, so that industrial exploitation can begin. When it does, the local population will be intimately involved, through the growing of red algae. On the scientific front, Tamba has developed a technique for algae cultivation and harvesting that does no harm to the species itself, since it is based on environmental conservation of red algae and preservation of the biological equilibrium. Research on algae reproduction, on yields per hectare, and on developing a suitable production technique indicates that the commercial exploitation of algae will produce significant benefits for local populations, by creating jobs and generating revenues that will be shared among them.

According to Mr Tamba, the task of bringing this project to fruition will depend on the speed with which various issues now before the Senegalese administration are dealt with. At Pointe Sarène, meanwhile, people have welcomed the project and are impatient to see industrial exploitation begin.

Research site

A research site, known as “Océanide”, is under construction at Ngaparou, and is already 80% complete. “There have been some delays, but the work should be wrapped up within three or four months,” states Tamba, who adds that the centre will serve as a laboratory and provide accommodation for African and western researchers.

"This research centre will provide facilities for researchers to delve into many aspects of natural products. IDRC will be providing funding for much of the technical material that will go into the laboratory, to the tune of CFAFr 25 or 30 million,” the project chief says, noting that “over the next three years, IDRC will also cover the centre’s management costs.”

Ecological tourism

Tamba adds that the centre will be used as an attraction for ecological tourism, and the proceeds from this activity will help to defray the cost of the investments. Apart from IDRC funding, financial support has also been secured from SOS Environnement France.

Before the industrial operations phase can begin, local populations will require training in the techniques of cultivation, harvesting, washing, and the removal of salt and impurities. For the moment, Tamba speaks of setting up a pilot unit as a forerunner of a full-scale industrial operation.

Compost production

Another promising application for red algae is the production of compost from the industrial waste products. This compost could then be used to make a rich form of soil fertilizer. Tamba believes that this compost could be produced at both the cottage and the industrial level, and that it would complement “a rational and integrated model of development for coastal populations, farmers and fishermen to use in exploiting the algae.”

An experiment is being set up that will imply close involvement of the local populations for whom, as Tamba stresses, the project was first conceived. “The main targets will be the local populations, who should be able to benefit handsomely from algae exploitation. That will allow them to enhance their standards of living.”